

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2000-353666

(43)Date of publication of application : 19.12.2000

(51)Int.Cl. H01L 21/205  
H01L 21/20  
H01L 29/786  
H01L 21/336

(21)Application number : 11-164889

(71)Applicant : MATSUSHITA ELECTRIC IND CO LTD

(22)Date of filing : 11.06.1999

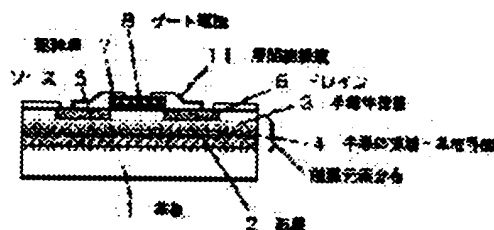
(72)Inventor : SETSUNE KENTARO  
KITAGAWA MASATOSHI  
NISHITANI MIKHIKO  
YOSHIDA TETSUHISA  
TAKASE MICHIIKO  
SHIBUYA MUNEHICO  
GOTO SHINJI

## (54) SEMICONDUCTOR THIN FILM AND MANUFACTURE THEREOF

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To form a crystalline silicon film at a low temperature by forming an atomic layer and a layer, having a peak concentration of a catalyst element around an interface between a substrate and a semiconductor thin film, and subsequently made to contain the catalyst element in and outside the semiconductor thin film.

**SOLUTION:** On a glass substrate 1, a coating 2 made of a material such as silicon oxide is formed through sputtering method, and then a semiconductor thin film 3 such as a crystalline silicon film is formed thereon. Subsequently, around an interface 4 between the substrate 1 and the semiconductor thin film 3, an atomic layer is formed, which contains a catalyst element for accelerating the growth of a crystal. Furthermore, a layer having a peak concentration of the catalyst element is formed around the interface 4 between the substrate 1 and the semiconductor thin film 3, and the catalyst element is contained in and outside the semiconductor thin film 3. Therefore, it is possible to manufacture a semiconductor thin-film device, such as a low-temperature forming thin-film transistor having high performance.



## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]